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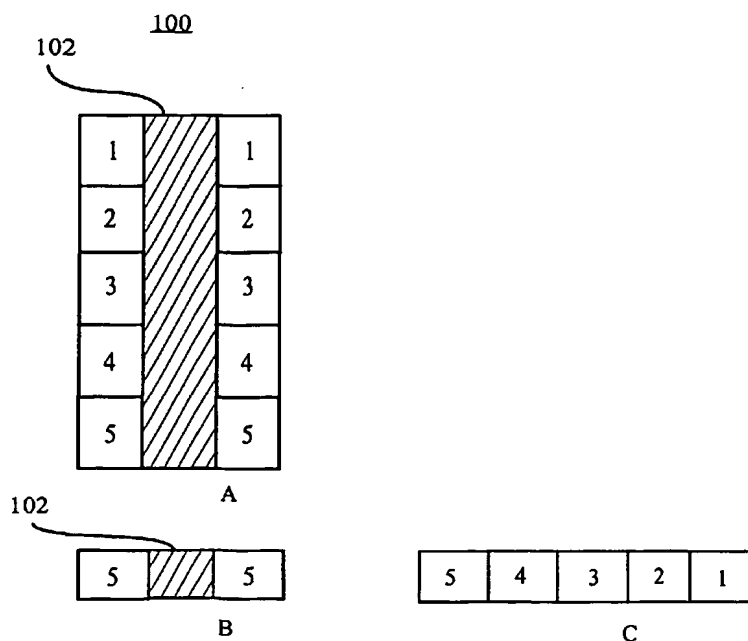
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[Continued on next page]

(54) Title: TRANSITIONS IN REFRACTIVE INDEX USING ELECTRO-OPTIC POLYMERS



(57) Abstract: The index of refraction of the doped regions (1-5) in a length of doped and/or "doped-and poled" electro-optic polymers is controlled so that a gradual transition from a small difference in refractive index between the doped and the undoped (core) regions ( $\Delta n$ ) to a large  $\Delta n$ , or vice versa, is achieved for use in, for example, a lightguide-to-fiber transition. Multiple methods for creating this gradual transition are disclosed.



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE,

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PCT/EP 03/28020

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G02B6/12 G02B6/30

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	INABA R ET AL: "TWO-DIMENSIONAL MODE SIZE TRANSFORMATION BY DELTAN-CONTROLLED POLYMER WAVEGUIDES", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, VOL. 16, NR. 4, PAGE(S) 620-624 XP000768969 ISSN: 0733-8724	1,12
Y	the whole document	2-11, 13-22
X	KOWALCZYK T C ET AL: "GUEST-HOST FLUORINATED POLYIMIDES FOR ELECTRO-OPTIC APPLICATIONS", MOLECULAR CRYSTALS AND LIQUID CRYSTALS SCIENCE AND TECHNOLOGY. SECTION B. NONLINEAR OPTICS, GORDON AND BREACH SCIENCE PUBLISHERS,, US, VOL. 14, NR. 1/4, PAGE(S) 185-195 XP000577789 ISSN: 1058-7268 the whole document	1,12

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- "&" document member of the same patent family

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## INTERNATIONAL SEARCH REPORT

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PCT/03/28020

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